



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

**Α.ΔΙ.Π.**

ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ & ΠΙΣΤΟΠΟΙΗΣΗΣ  
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC

**H.Q.A.**

HELLENIC QUALITY ASSURANCE  
AND ACCREDITATION AGENCY

## EXTERNAL EVALUATION REPORT

DEPARTMENT OF MEDICAL LABORATORIES

ALEXANDER TECHNOLOGICAL EDUCATIONAL INSTITUTE  
THESSALONIKI

May 2012



European Union  
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MINISTRY OF EDUCATION, LIFELONG LEARNING AND RELIGIOUS AFFAIRS  
MANAGING AUTHORITY

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### **External Evaluation Committee**

The Committee responsible for the External Evaluation of the Department of Medical Laboratories of the Alexander Technological Educational Institute of Thessaloniki consisted of the following four (4) expert evaluators drawn from the Registry constituted by the HQA in accordance with Law 3374/2005

1. Prof. Dr. Panagiotis Karanis (coordinator)  
University of Cologne, Germany
2. Prof. Dr. Nikolaos Venizelos  
University of Örebro, Sweden
3. Dr. Thomais Kakouli-Duarte  
Institute of Technology Carlow, Ireland
4. Dr. Evangelos Papafrangas  
Former Director of the Department of Clinical Microbiology Sismanoglion General Hospital of Athens, Former President of the Hellenic Society for Microbiology, Greece

**N.B.** The structure of the “Template” proposed for the External Evaluation Report mirrors the requirements of Law 3374/2005 and corresponds overall to the structure of the Internal Evaluation Report submitted by the Department.

The length of text in each box is free. Questions included in each box are not exclusive nor should they always be answered separately; they are meant to provide a general outline of matters that should be addressed by the Committee when formulating its comments.

## **Introduction**

### **I. The External Evaluation Procedure**

- Dates and brief account of the site visit.

The External Evaluation Procedure (EEP) constituted by relevant site visits (Monday 7 May 2012 to Wednesday 9 May 2012) and by drafting of the associated External Evaluation Report (EER; Thursday 10 May 2012 to Saturday 12 May 2012). The External Evaluation Committee (EEC) visited the ATEI in Thessaloniki from Monday 7 May until Wednesday 9 May. The Department was established in 1973 under the auspices of post-secondary technological education (KATEE). In 1984, it was upgraded and included into the higher education system (TEI). Finally, according to Law 2916/2001, all ATEI departments are part of the official Greek tertiary education system (ATEI). ATEI campus is situated in the suburb of Sindos, Thessaloniki, roughly 17 km from the city centre. Public transport by bus is available. During these three days the EEC had the opportunity to meet teaching staff and students, to inspect the departmental and campus facilities of ATEI, and to visit the ATEI teaching affiliated hospitals Papageorgiou General Hospital and 424 Military Hospital. Subsequently, the EEC met on Thursday 10 May 2012, at the designated meeting room at the Divani Acropolis Palace Hotel, with the staff of HQA for a short update and confirmation of the goals and expectations of the EEP. The evaluation process was discussed by the EEC members and the HQA officers.

- Whom did the Committee meet?

HQA:

- Dr. Kleomenis Oikonomou
- Ms. Ioanna Leraki
- 

ATEI Thessaloniki:

- The Head of School of Health and Welfare Professions (SEYP) Prof. Christos Petrou
- The Head of Department of Medical Laboratories, Assoc. Prof. Stella Mitka
- All full time academic staff, all part time academic staff, technical and support staff, and administrative staff
- Students from various semesters of the course, alumni, a TEI graduates'

representative and four international postgraduate students

- An alumnus of the Department who completed postgraduate studies abroad and is regularly a visiting lecturer at the University of Dundee, UK
- Library staff
- Career Guidance Staff
- ERASMUS and ERASMUS Mundus Administrative Staff

#### Papageorgiou General Hospital

- The President of the Hospital Governing Board
- The General Director of the Hospital
- The Director of the Administrative Services of the Hospital
- The Head of the Medical Technological Staff of the Hospital
- Directors of various hospital laboratory units
- Students on clinical practical training obtaining their work experience at the hospital
- Technical staff of the hospital laboratory units
- Lecturers of the Department supervising students on hospital placements

#### 424 Military Hospital

- A high rank military doctor specialist in clinical microbiology
- Associated laboratory staff

- List of reports, documents, other data examined by the Committee

- Guidelines for the Members of the EEC
- The Department Internal Evaluation Report (IER, 2012)
- Curriculum and course information (2007)
- The Department Study Guide (2012), including a range of administrative policy and procedures documents and various forms
- Samples of student practical worksheets and the work placement log book
- A selection of student final year degree projects (theses)
- A range of course text books, including those written and edited by academic staff members
- Course teaching material produced by academic staff

- Groups of teaching and administrative staff and students interviewed

#### ATEI Thessaloniki

- Academic staff (all full time staff and part time staff)
- Administrative and support staff (departmental, office and library staff and technical staff)
- A large number of students from various semesters
- An alumnus of the Department undertaking postgraduate studies abroad
- A former student and TEI graduate representative, currently studying at the Medical School of the Aristotle University in Thessaloniki

#### Papageorgiou General Hospital

- Heads of various hospital units (Cytology Laboratory, Pathology and Anatomy Laboratory, Clinical Microbiology Unit)
- Members of the technical staff of various hospital units (Clinical Microbiology Laboratory, Cytology Laboratory, Pathology and Anatomy Laboratory)
- Supervisors of the Department overseeing students on work placement
- Students on the clinical practical training placements

- Facilities visited by the External Evaluation Committee.

The facilities inspected are detailed below:

#### Teaching

- Various classrooms
- Various laboratories
- The departmental library
- Staff offices

#### Research

- Several research laboratories

#### Papageorgiou General Hospital

- Various hospital laboratories (Clinical Microbiology Laboratory, Cytology Laboratory, Pathological Anatomy Laboratory,)
- Hospital canteen

#### 424 Military Hospital

- Clinical Microbiology Laboratory
- Molecular Biology Laboratory

#### Other Services

- Student and staff restaurant
- Administrative offices

## II. The Internal Evaluation Procedure

Please comment on:

- Appropriateness of sources and documentation used

The EEC found that the sources and documentation provided were appropriate. These were the IER and the various teaching texts and materials, student information supplements and administrative documents and forms.

- Quality and completeness of evidence reviewed and provided

The evidence reviewed and provided was most appropriate.

- To what extent have the objectives of the internal evaluation process been met by the Department?

Although the IER does not include clearly delineated objectives, the EEC felt that the objectives of the internal evaluation process have been met at a satisfactory level by the Department. The process followed by the Department is detailed on pages 3 to 4, while the conclusions (pp. 72) and the improvement plans (pp. 73-75) clearly address the IER objectives.

## **A. Curriculum**

*To be filled separately for each undergraduate, graduate and doctoral programme.*

### APPROACH

- What are the goals and objectives of the Curriculum?

The goals and the objectives of the Department are presented in the IER (pp. 7-9) and appear to be in agreement with Presidential Directive 163(3) (Ministerial Gazette FEK118-14/6/1996).

- What is the plan for achieving them?

The Department

- Gradually upgraded the curriculum, in 2003 and 2007
- Recruits new qualified teaching staff
- Updates the teaching material, teaching texts and teaching tools via participation in the Programme of Undergraduate Studies Improvement (EPEAEK) or independently.
- Upgrades the laboratory and research facilities and equipment of the Department via participation in all available funding programmes
- Cultivates a research mentality in students by their participation in research activities.

In addition

- Practical attendance is mandatory. Practical exercises coincide and keep up with theory teaching content via collaboration between academic and technical staff
- There is a six month clinical practical training in a collaborating organisations (e.g. hospitals)
- There is a final semester degree project based on a practical topic or/and a literature review
- Academic staff are encouraged to present at conferences and submit papers for publication with student participation

- How were the objectives decided?

The academic staff are involved in formulating departmental policy and the consensus is also taken into account for the decision of the final programme objectives, as detailed in IER (pp. 7).

- Which factors were taken into account?

These objectives were decided according to the Presidential Directive 163(3) (Government Gazette/FEK 118-14/6/1996) on the Professional Rights of the Department Graduates, the Ministry of Health, market needs, international standards and trends, and the internal policies and procedures of ATEI of Thessaloniki.

- Were they set against appropriate standards?

These objectives were set against relevant international standards such as for example:

- BSc of Biomedical Sciences (ex. Polytechnics, Fachhochschule, Universities of Applied Sciences, U.K., Germany, Austria, Belgium, France, Italy, Ireland etc. ; EUROPE)
- Departments of Medical Laboratory scientists or Clinical Laboratory technologists providing BSc in Medical Technology (3+1, 2+2; ASCP; <http://www.ascp.org/>; USA)

- Did the unit consult other stakeholders?

Academic staff and students of the Department were consulted, as affirmed in the EEC meetings, but the IER does not contain clear reference to the participation of social stakeholders in the design of the programme.

- Is the curriculum consistent with the objectives of the Curriculum and the requirements of the society?
  - Upon completion of their studies the graduates of the Department are equipped with the necessary qualifications to enable them to work in all professions of the subject range of the Department.
  - The permanent link with hospitals contributes towards gaining experience in relation to the teaching and training process manifested by the gradual programme reviews in 2003 and 2007. The Department is in contact with the Pan Hellenic Association of Medical Laboratories Technologists (PETIE) and other EU/international programmes (e.g. ERASMUS, ERASMUS Mundus), and it is updated on professional issues which are of use and taken into account for the ever changing societal needs.
- How was the curriculum decided? Were all constituents of the Department, including students and other stakeholders, consulted?

The curriculum was decided after consultation of academics and students.

- Has the unit set a procedure for the revision of the curriculum?

Although there is no clear procedure for curriculum revision, it strongly corresponds to respective curricula of American Universities (Armstrong Atlantic State, University of Dakota, Michigan University, Maryland University, etc.) (IER, pp. 24)

#### IMPLEMENTATION

- How effectively is the Department's goal implemented by the curriculum?

Very effectively; the curriculum corresponds to the departmental goals as detailed in IER (pp. 7).

- How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?

The curriculum is comparable with curricula of respective international programmes of study with which the EEC is familiar. This is also reaffirmed by the fact that some Department graduates have been accepted for postgraduate studies in highly reputable European institutions.

- Is the structure of the curriculum rational and clearly articulated?

Yes, the curriculum is rational and clearly articulated. This is particularly reflected in the succession between the prerequisites and dependent courses.

- Is the curriculum coherent and functional?

Based on the above observations, the EEC finds the curriculum coherent and functional.

- Is the material for each course appropriate and the time offered sufficient?

Yes. The academic staff will also omit the module of instrumentation (in the 3<sup>rd</sup> semester) and will integrate in other modules elements of instrumentation when required.

- Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?

By international standards it seems to be that the permanent and the part time academic

staff are very well qualified in various disciplines with a broad range of experiences , which include medical doctors, biologists, and biochemists. The EEC finds this to be a good basis for the development of further postgraduate education.

#### RESULTS

- How well is the implementation achieving the Department's predefined goals and objectives?
  - The EEC is satisfied that the programme achieves the Department goals and objectives detailed in IER
  - Graduates are qualified to work as professional practitioners in Greece and in other European countries, as the programme is at EQF Level 6 ([http://ec.europa.eu/education/lifelong-learning-policy/doc44\\_en.htm](http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm)). In addition, graduates are equipped to undertake postgraduate studies.
- Does the Department understand why and how it achieved or failed to achieve these results?

Yes, the department understands why and how it achieved or failed to achieve these results by monitoring the distribution of graduates in the job market (e.g. in hospitals and private practices) and their level of entry into postgraduate programmes of national and international universities. The academic staff also monitor student performance in the relevant postgraduate courses they enrol. In addition, they periodically consult with staff of public and private medical laboratories. Finally, the Department periodically surveys the views of past graduates working in medical laboratories with the aim to improve the curriculum and enrich it with topics to be included in lifelong learning programs (IER, pp. 16).

#### IMPROVEMENT

- Does the Department know how the Curriculum should be improved?

Yes, the Department staff are fully aware of the needs for improvement and how to achieve this. The current curriculum is relatively new and it is the by-product of internal evaluations and consultations with academic staff and students.

- Which improvements does the Department plan to introduce?

There are continuous efforts to cover any identified knowledge gaps in the curriculum. Such deficiencies are dealt with by posting of complementary lecture material in BLACKBOARD (IER, pp. 20).

## **B. Teaching**

### APPROACH:

Does the Department have a defined pedagogic policy with regard to teaching approach and methodology?

The Department uses conventional and classical teaching practices. The EEC could not identify a defined and specific pedagogic policy or framework with regards to the teaching approach and methodology in the ATEI Thessaloniki. The EEC recommend the introduction of pedagogical models compatible to the Bologna requirements.

Please comment on :

- Teaching methods used
  - Classical cathedral teaching method is mostly used
  - Seminars
  - Presentations
  - Practical sessions

- Teaching staff/ student ratio

1/18 (35/630) – the figures used include all teaching staff (permanent, non-permanent and technical), while the student number is the one representing students of all semesters in academic year 2010-2011; the EEC find this to be a good ratio.

- Teacher/student collaboration

Based on staff and student interviews by the EEC, it became evident that the teacher-student collaboration is excellent. It was evident in meetings that staff-students' relationships are respectful, promoting a professional and effective learning environment.

- Adequacy of means and resources

- Students are taught by committed and well qualified teachers.
- The facilities are of international standard with state of the art equipment.
- The library is well equipped with a plethora of text books and online access of electronic databases (e.g. Science Direct, Heal Link, Web of Knowledge, Springer, Elsevier, etc.). In addition, on entry each student receives a library information pack updating them on library facilities and guiding them appropriately on referencing systems. The EEC recommend that particular emphasis should be given to train students to avoid plagiarism. The library facilities and services provided were found to be of an excellent standard. This is especially realized by the presence of highly qualified, committed and enthusiastic librarians.
- The Departmental facilities create an environment for positive staff and student interactions, which enhances the effectiveness of teaching and learning. However, this can be improved with the provision of additional teaching space for theory classes as well as a quiet area.

- Use of information technologies

- There is a well known electronic on-line platform (BLACKBOARD) via which students can obtain relevant course material
- Students have readily available internet access
- Please see library resources as above

- Examination system
  - Written exams at the end of each semester for theory and laboratory subjects
  - Obligatory written examinations and continuous assessment in laboratory subjects
  - Submission and assessment of laboratory work books
  - The ECC feels that the students are over assessed under these practices
  - The BSc diploma thesis examination is carried out by a three member committee with relevant expertise. The committee members read the thesis, attend the relevant presentation, and assign a final mark. There is a clear procedure for the dissertation examination as well as a format that the dissertation should follow (IER, pp. 23).

The EEC had the opportunity to look at copies of dissertations. There is a list of assessment criteria, but should be improved by including items on the quality of the work, and not only on practical aspects of the dissertation, as it currently stands. Despite the existence of these criteria, the marks do not always reflect the quality of the dissertation and there is a tendency to allocate very high marks in most of the dissertations. The latter is an issue that staff members need to rethink and marks need to be spread much more widely. In addition, some dissertations lacked critical analysis.

Assessments and exams create a significant workload to the faculty staff and at times it seems unmanageable. This is an area that requires more effective management and additional manpower to be involved with it.

## IMPLEMENTATION

Please comment on:

- Quality of teaching procedures

There are a large number of cathedral lectures, which might not be helpful to enhance the lifelong learning skills and abilities of the students. On the other hand, the implementation of seminars, presentations and laboratory exercises constitutes a good quality approach to develop the learners' strengths. The EEC feels that, overall, students are satisfied with the teaching procedures.

- Quality and adequacy of teaching materials and resources.

The EEC visited the library of the Department of Medical Laboratories of the Alexander Technological Educational Institute of Thessaloniki and found the resources to be excellent, with electronic access to a large number of journals. The above have been found to be adequate and of excellent quality. Overall, the students reported that they were satisfied with the use of the existing electronic literature databases. The EUDOXOS system is welcomed by the students, as it facilitates the process of obtaining books more quickly and gives them the opportunity to select their preferred titles. Software for detecting plagiarism is missing, but the library is planning to obtain such software in the near future. Concerning teaching facilities, all the teaching rooms were equipped with projectors for using Power Point presentations or other visual teaching efficiency material.

- **Quality of course material. Is it brought up to date?**  
The EEC found the course material of good quality. The curriculum has last been updated in 2007 and the relevant text books could be improved further. The laboratory instruments are up-to-date and of wide range. Although there is laboratory demonstration *in situ* material, this needs further enrichment; this was evident in anatomy, anatomopathology and parasitology.
- **Linking of research with teaching**  
There is a linkage between research and teaching, but there is not substantial output in the form of original papers. The academic staff are focused on the provision of good quality training in order to produce well qualified graduate technologists able to fulfill the needs of their profession.
- **Mobility of academic staff and students**  
The EEC feel that the Department of Medical Laboratories of the Alexander Technological Educational Institute of Thessaloniki has an impressive external profile. Staff and students participate in international exchange and mobility programmes (e.g. ERASMUS) with other European education institutions. The EEC found this of excellent level. There are two offices dedicated to the ERASMUS-ERASMUS MUNDUS programmes with enthusiastic and effective staff. There are a lot of exchanges with a wide range of universities in Europe and Asian countries. The staff members are well prepared to provide best services to students and academic staff participating in these exchange programmes. They also demonstrate initiatives and proactivity to secure new funding for the continuity and improvement of the exchange programmes.
- **Evaluation by the students of (a) the teaching and (b) the course content and study material/resources**
  - The academic staff are regularly surveying student opinions with relevant questionnaires.
  - During their meeting with a large number of students the EEC were impressed by the positive views of the students on the departmental teaching and course material and resources.

## RESULTS

Please comment on:

- **Efficacy of teaching.**

From materials provided and interviews with staff and students it was evident that the teaching is efficient. The EEC concluded that academic staff and clinical mentors of the Department of Medical Laboratories of the Alexander Technological Educational Institute of Thessaloniki are very effective teachers in theory and practice. This was documented in the evaluative surveys of courses and staff, and was communicated to the EEC by the majority of students.

- The graduates upon their exit are well prepared to commence professional practice in their field of learning. This was also confirmed by the hospital staff met by the EEC.

- **Discrepancies in the success/failure percentage between courses and how they are justified.**

There are discrepancies in the success rates between subjects. After consultation with the academic staff, the EEC felt that the discrepancies were due to student attendance.

The major reason for poor attendance seems to be that often students work to financially support their studies. Furthermore, the location of the department away from the city also seems to be another factor for poor student attendance. The current economic crisis in the country is likely to make this situation worse.

- Differences between students in (a) the time to graduation, and (b) final degree grades.
  - Completion time should be a minimum of 4 years. The EEC observed a considerable proportion of graduates completing their studies up to one, two, three and four years after the assigned study time (e.g. 4+1, 4+2, 4+3, 4+4). The reasons for these delays are directly linked with the reasons detailed above.
  - The majority of final degree grades were distributed in the ranges of 7.0-8.4, followed by the ranges of 8.5-10.0 and 5.0-6.9, (IER, pp. 91). This was observed for the years 2006 to 2011. However, the average degree grades for the years 2006 to 2011 remained consistent around the mark of 7.5.
  
- Whether the Department understands the reasons of such positive or negative results?
 

Yes. The Department understands the reasons of variable results and encourages the students to graduate in the minimum required time. At the same time, the current legislation allows students to remain registered at all higher education institutions (e.g. TEI and Universities) beyond the minimum required time of study.

#### IMPROVEMENT

- Does the Department propose methods and ways for improvement?

Yes. The academic staff strive to uphold the current excellent teaching standard. This will provide students with greater flexibility in their learning and could improve student participation in theory learning.

- What initiatives does it take in this direction?
  - Internal Evaluation Report
  - Institutional Review
  - Student evaluation questionnaires of staff and subjects
  - Invitation of guest speakers
  - Participating in teaching training programmes
  - Organising relevant workshops

## **C. Research**

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

### **APPROACH**

- What is the Department's policy and main objective in research?
  - The department staff are involved in interdisciplinary research activities with other ATEI departments, universities and hospitals. Between March 2007 and 2012 the academic staff have contributed 39 peer reviewed papers in national and international journals, 9 published abstracts, and 115 conference proceedings. The EEC would like to recognise the staff efforts to pursue research in medical technology and health related areas. Despite a number of publications being produced on an annual basis, ATEI policy and main objectives for research seem to depend highly on individual interests of each staff member.
  - The Department received three awards for research outcomes
  - Their main objective is to acquire the capacity to provide Level 7 MSc programmes
  
- Has the Department set internal standards for assessing research?
 

There is no evidence for the existence of internal standards for assessing research performance.

### **IMPLEMENTATION**

- How does the Department promote and support research?
  - The Department within its financial constraints obtains supplies of research consumables and equipment for research purposes
  - There is direct update of the academic staff in relation to research funding opportunities as they become available Via establishing collaborations with national and international research groups
  - Via capitalizing of existing research infrastructure of ATEI from other departments on campus

The students' interests in research activities are promoted by the international exchanges and collaborations which the ATEI has established. There are possibilities for international employment opportunities and networking. Students who were interviewed by the EEC members showed a high level of motivation and awareness about these topics.

- Quality and adequacy of research infrastructure and support.
 

The Department has established well equipped laboratories for research purposes. In addition, the academic staff share very good research infrastructure and expertise from other departments on campus. However, research support is limited due to current lack of personnel and consumables' funding.
  
- Scientific publications.
 

Between 2007 and 2012 the Department has published 39 peer reviewed papers. Despite the financial problems noted above there is an ascending trend in the number of published papers. Generally, while the quantity of publications is adequate, the quality is not comparable to other institutions nationally and abroad, and this is a priority area that needs careful planning.

- Research projects.  
The Department staff continuously submit research proposals for funding but these have not been recently awarded.
- Research collaborations.  
The Department members are positively oriented and motivated to establish interdisciplinary research collaborations at national and international levels (IER, pp. 46).

## RESULTS

- How successfully were the Department's research objectives implemented?  
The Department research objectives have only been partly implemented due to the limitations in research funding. Another reason is the lack of protected additional time for research activities over and above the heavy workload including teaching, clinical supervision, thesis supervision, administrative work and individual studies.
- Scientific publications.  
Between 2007 and 2012 the Department staff published 39 peer reviewed papers in national and international journals. The EEC finds the number of publications adequate. However, quality needs to prevail over quantity.
- Research projects.  
According to the IER from 2005 to 2011 the academic staff have participated in various research projects either as principal investigators or project collaborators under various funding programmes (e.g. Archimedes I and II; IER 48-51). However, information on the amount of funding allocated to the Department is not provided. The number of the submitted research projects shows the high degree of motivation, innovation and potential of the academic personnel, limited by the lack of funding, time and manpower.
- Research collaborations.  
Research collaborations and bilateral research agreements exist with other national and international institutions (IER, pp. 46). In conclusion although external research collaborations and the dissemination of their research outcome depend mainly on the individual efforts of the academics themselves, the EEC find the number of collaborations and publications adequate. However, quality as mentioned before needs to prevail over quantity.
- Efficacy of research work. Applied results. Patents etc.  
There is potential for industrial applications of research outputs, but no evidence of patents or other applications.
- Is the Department's research acknowledged and visible outside the Department?  
Rewards and awards.  
Since 2004, the academic staff are presenting undergraduate project results in conferences. In addition, they co-supervise postgraduate students from other institutions. The Departmental presentations have awarded two times at national level and once at international level with the Young Investigator's Award of the European

Federation for Pharmaceutical Sciences. According to Scopus there are 246 citations of the departmental publications with an ascending trend. The academic staff have participated in 16 conference organising committees. In one of these there were 4 Department members participating simultaneously. Two of these committees were organising international conferences. In addition, on many occasions the Department staff have chaired sessions in conferences. Members of the academic staff have participated in 12 editorial committees in Greek scientific journals. One member is editorial board member in the International Journal of Caring Sciences. One member is a reviewer in the journal Infection. One member of the Department belongs to the editorial board of two international journals (Journal of Environmental Protection and Ecology and Fresenius Environmental Bulletin). In the last 5 years members of the academic staff have been invited 46 times as guest speakers for various local lectures and presentations. Members of the Department are members of various local and national committees. All members of the academic staff belong to 16 scientific societies.

#### IMPROVEMENT

- Improvements in research proposed by the Department, if necessary.

The EEC feel that the academic staff are focused towards increasing research funding. They have already undertaken initiatives to overcome funding restrictions despite the difficult financial situation at national level. The EEC and the Department recognize the urgent need to develop a strategic research plan with short-, medium- and long-term goals.

- Initiatives in this direction undertaken by the Department.

They have submitted research funding applications to Archimedes III and rejected applications were resubmitted in English. From these, two out of three passed the first evaluation phase but not the second. There are plans for postgraduate programmes, which can become a significant asset for the promotion and the maintenance of high quality research activity within the Department and this should be further encouraged.

### ***D. All Other Services***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

As “other services” are considered the following (IER pp. 67-71):

1. The administrative and technical services
2. Student welfare services
3. Career guidance
4. Exploitation of new technologies by the Department
5. Transparency and efficiency in infrastructure and equipment use
6. Transparency and efficiency of financial resources

#### APPROACH

- How does the Department view the various services provided to the members of the academic community (teaching staff, students).

The views of the Department in relation to these services are excellent and are detailed in the IER (pp. 67-71). The main points are:

- The secretariat of the Department is well equipped with highly qualified personnel
- The laboratories are equipped with highly effective technical teaching staff; however it is noted that two more technical staff are required in order to undertake the organization of the biotechnology, genetics and clinical chemistry laboratories
- The library opening hours are limited and need to be extended so that students can dedicate sufficient time to their studies on campus
- There is a welcoming welfare ceremony for first year students
- A personal tutor is assigned to each student
- The Career Guidance Office provides information to students in relation to work opportunities during and after their studies at ATEI
- All students are provided with meal vouchers
- The Student Welfare Services provide special financial support for students financially weak students
- There are various national and traditional events organized for students
- There are sport and dancing events organized
- There are special language courses and excursions in cultural sites are organized for foreign students
- All students have access to the library, computer and on line services

- Does the Department have a policy to simplify administrative procedures? Are most procedures processed electronically?

Yes. This has been explained to the EEC during the administrative staff interviews and is also detailed in the IER (pp. 70). Many of the administrative procedures have been simplified recently and now include electronic processing but there is still room for continuous quality improvement.

- Does the Department have a policy to increase student presence on Campus?

The Department plans to increase student presence on campus with the organization of workshops and seminars.

#### IMPLEMENTATION

- Organization and infrastructure of the Department's administration (e.g. secretariat of the Department).  
The Department considers the acquisition of additional administrative staff vital for the efficient operation of the secretariat.
- Form and function of academic services and infrastructure for students (e.g. library, PCs and free internet access, student counseling, athletic- cultural activity etc.).
  - The overall student support services are excellent
  - According to the IER the facilities for extracurricular activities are satisfactory

#### RESULTS

- Are administrative and other services adequate and functional?  
According to comments by staff and students' the administrative and other services are adequate and functional.
- How does the Department view the particular results?  
The Department considers these satisfactory.

#### IMPROVEMENTS

- Has the Department identified ways and methods to improve the services provided?  
Yes. The Department elaborates on this in the IER (pp. 73-74) and this was also articulated during meetings with the EEC. The administrative staff is self-motivated and is making efforts to improve all the processes under the financial and law restrictions present.

- Initiatives undertaken in this direction.
  - The Department aim to improve the infrastructure in order to maintain the safe and good working conditions
  - The Department aim to acquire new equipment for laboratory work and teaching efficiency
  - The academic staff will organise workshops in central areas of Thessaloniki, where undergraduates will present their project work and external experts (e.g. from the Aristotle University, affiliated hospitals and other educational and industry organisations) will be invited

#### Collaboration with social, cultural and production (SCP) organizations

Please, comment on quality, originality and significance of the Department's initiatives.

The Department recognises the importance of links with SCP organisations and they express this with the following activities:

- Students contribute to blood donations twice a year
- The Department staff and students visit orphanages
- Cooperation with local hospitals in the greater Thessaloniki area
- Research focused on diseases with wider social significance (e.g. Alzheimer, psychiatric disorders and congeneric disorders)
- The Department supports public health providers (e.g. IKA), football teams and schools
- The academic staff offer public lectures in schools and host open days raising awareness on important public health aspects, e.g. food-borne and water-borne diseases and the health effects from mobile phone radiation

These activities are of high social and public health significance and they enhance the societal value of the Department, while promoting good interaction among staff, students and society. Nevertheless, social responsibility activities need to be further developed, including an appropriate strategy for this. Wider community activities should be established as part of the curriculum too in a more formal basis.

### ***E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

Please, comment on the Department's:

Potential inhibiting factors at State, Institutional and Departmental level, and proposals on ways to overcome them.

The EEC considers the following inhibiting factors and makes the following recommendations:

- Lack of funding; the Department needs to become more persistent in its funding pursuing strategy. Participation in European Framework Programme funding applications might be a way to overcome this.
- Lack of funding either at state or Institutional levels; the Department should seek external funding from benefactors, sponsors, should liaise with the health/pharmaceutical industry and integrate in collaborative projects.
- Increased student numbers; the Department must reduce its student intake.

- Short-, medium- and long-term goals.

Short term

- The Department will update and improve its curriculum

Medium term

- The Department strives to develop an MSc programme
- The Department wishes to increase efforts in order to solve the problem of the lack of building infrastructure

Long term

There is an absence of self reliant postgraduate and doctoral programmes in the Department of Medical Laboratories. The Department does not have a PhD programme and is not currently in collaboration with another University in order to run such a programme. In addition it lacks a Master's level postgraduate programme.

- The Department wishes to establish the capacity to deliver PhD programmes
- The Department is focused on maintaining the forefront of knowledge in its areas of expertise. In addition, although there is a consistent philosophy regarding the education policy of the Department, it is difficult to implement long term planning mainly due to current obstacles in Higher Education reform, coupled with the economic situation of the State and subsequent lack of funding.

- Plan and actions for improvement by the Department/Academic Unit

- The Department wishes to link with production organisations
- It engages in efforts to secure additional departmental space
- It will undertake immediate action on space and building renovations which will create efficient and safe working conditions in the Department according to international standards

## ***F. Final Conclusions and recommendations of the EEC***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

Conclusions and recommendations of the EEC on:

- the development of the Department to this date and its present situation, including explicit comments on good practices and weaknesses identified through the External Evaluation process and recommendations for improvement

The Department has come a long way in developing and implementing the delivery of its curriculum. The EEC have been very impressed with the excellent calibre and motivation of the staff, their enthusiasm and commitment in teaching and learning, and their continuous professional development. Equally the EEC were impressed with the dedication, sensitivity and clear focus of the medical technology students. The teaching element of the Department is of high quality and it produces knowledgeable and skilled medical technologists.

The EEC would like to highlight the following positive aspects:

The academic staff of the Department are of high standard as demonstrated by their academic qualifications and professional experiences.

They have clear and specific targets and are embracing current developments. This is complemented by the competency of part time teaching staff as well as the technical staff, and is reflected by knowledgeable, self-confident and well-articulated students as manifested by their interviews with the EEC.

The EEC feels that further improvements are needed in the following areas and they recommend:

- Due to the nature and to the extent of contributions to the current education and practical work provided and carried out in the Department, the EEC recommend that the departmental name could be re-placed with the name 'Department of Biomedical Laboratories'.
- The Department fulfils all the requirements for its goals and for maintaining the BSc requirements (Level 6 status). It also has the necessary structure, research capability and academic level to provide taught postgraduate (1 year Master degree), education programmes. Provision of MSc programmes by research seems to be difficult due to lack of funding at this time. Upon resolution of the funding situation, the EEC will be willing to re-evaluate and recommend the Department for the provision of Level 7 (MSc level by research) qualifications. Furthermore, the EEC is supportive of progress to PhD level following the MSc provision acquisition. Additional requirements for reaching that level are considered to be: establishment of a critical mass of researchers, capital infrastructure and substantial research funding. Nevertheless, it was clear from the site visit that the academic staff are planning to achieve the criteria for reaching the PhD level provision.
- The contributions of first and non-first authors varied greatly within and among the published papers. It is not clear if an appreciable number of authors made substantial, little, which, or no substantial contributions to the research. There is therefore a need for an analysis of published data in this context. The process of identifying and evaluating research outputs should involve professionals with the appropriate expertise required to recognize and evaluate the information reported. The results offered should be scientifically valid, confirmed, and should have significant implications to the aims of the Department. The Department is well equipped for its professional mission; further improvements will enhance the good

work of the Department.

- The Department strives to expand its research capacity, and acquire Level 7 (by research) and Level 8 status. It is therefore imperative that bilateral formal research agreements are made with relevant internationally reputable research organisations in Greece and abroad. This will foster the necessary collaborations to bring the Department closer to the Level 8 target. Capital funding should also be sought as the limited current research infrastructure does not support the accumulation of a critical research mass for the provision of Level 7 (by research) and Level 8 programmes.
  - Prior to the establishment of PhD courses, at departmental level, the staff should be asked to provide consent for future use that includes as much detail as possible, including information associated with commercialization activities, and the nature of likely future research initiatives. In addition, the EEC recommend that the Department should provide courses to academic staff on postgraduate student supervision. The educational programme of the Department could raise its quality level by reducing the student intake in each semester. This would allow for better use of resources, including laboratory facilities.
  - Although the Department's laboratories are spacious, the EEC recommend that a biosafety/biosecurity and chemical usage protocol must be adopted in the Department practices. Clear policy and procedures in this context must be written and implemented in the relevant work areas.
  - Basic laboratory safety and disinfection facilities must be installed in all laboratories, such as eye wash facilities and hand washing facilities, and one shower facility at departmental level.
  - A Standard Operation Procedures Manual Book should be compiled for all procedures involving departmental equipment and facilities. This book must be kept in a commonly accessible place (e.g. the Secretariat) to be consulted by all technical and research staff and be updated when required.
  - The ATEI administration has demonstrated a diligent effort to modernise procedures and offer remote access to students (e.g. BLACKBOARD etc).
  - The way that graduates receive their BSc certificates should get modernised and offer the possibility of awards in *absentia*, in line with current international practices.
  - The EEC recommend that the quality of BSc level theses should improve according to current international levels. The criteria for the examination of such theses should agree with the common international marks and standards.
  - The EEC recommend the further increase of student mobility in relation to their work placement in Greece and abroad. The current practice involves hospitals in the Thessaloniki greater area but students should also be encouraged to work in hospitals in other Greek cities as well. In addition to this, it is recommended that students should start applying for work placement in hospitals of other European countries. This will enhance the students' maturity and cultural appreciation, and will provide them with the prospect that any hospital and any European country will be potential places for employment.
- the Department's readiness and capability to change/improve  
The Department has demonstrated the capacity and willingness to change/improve and this can be seen in the following areas:

- Overall improvement in building and space infrastructure for the establishment of safer and more efficient working conditions for staff and students
  - Better use and management of alternative energy sources in Department
  - Electronic services have been improved and reached an excellent level
  - The Department actively seeks external competitive research funding
  - The academic staff upgrade their courses according to current international standards
- The Department's quality assurance.
    - The most obvious mechanisms of quality assurance observed by the EEC are the IER and EER systems. In addition, the final semester theses are corrected by more than one internal examiner. The EEC recommends that external evaluators can be used to assess the good quality of examination practices. In addition, undergraduate exam scripts should be corrected by student code numbers and not names.
    - The EEC recommend that the Department observes strict guidelines for the preparation of the examination work by graduate students. The final year BSc Theses follow theoretical formats, solely based on a literature review, or practical formats, that also contain an experimental part. Although there are no reasons to doubt the good work of the Department, the EEC wishes to advise the staff to give particular emphasis in adopting international criteria for the theses examination. It should also be noted that the students should be taught about the importance of avoiding internet copy transfer and plagiarism.
    - The Department needs to approve and adopt a more clear and systematic overall quality assurance protocol.
    - The EEC recommend that external evaluations may be carried out in short notice as a quality check in order to confirm that recommendations of past EEPs have been met to the possible maximum.

### **Concluding Remarks**

Having completed this review and given due consideration to the findings, the EEC recommend the following for the attention and action of the Ministry of Education and the Ministry of Health:

The EEC acknowledges the work of the academic staff on the compilation of the IER. Taken into consideration all the departmental endeavours, efforts, and activities, the overall infrastructure and the education programme, the good conditions for work and study, the variety of learner support systems, and the wide choice of social and sport activities, the Department of Medical Laboratories in ATEI Thessaloniki is clearly a unit for the provision of higher education programmes to Level 6 according to the Bologna Process. The Department has potential for further improvements, while at the same time it has an obligation to provide the best education to its students. The main disadvantage of the Department is its deficiency in funding. This can be overcome with a more persistent funding seeking campaign (e.g. increase of the number of applications, collaboration with more international partners, approaching benefactors and sponsors, etc.). The advantages of the Department are (1) the excellent expertise of the teaching staff, (2) the availability of enthusiastic students who are willing in their majority to participate in research projects and (3) the high level education opportunities it provides. The Department academic staff have proactively formed affiliations with relevant collaborative organizations in order to cover potential deficiencies and limitations. However, the EEC urgently recommend that the Ministry of Education support the ATEI via the annual budget.

### The Members of the Committee

Name and Surname	Signature
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	